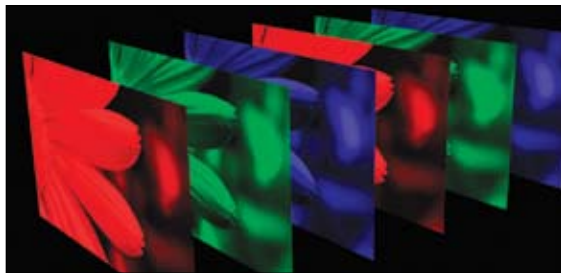


3-Panel vs. Single-Chip



LCD: A 3-Panel Solution

LCD technology utilizes three discrete chips, or panels, that overlay full-screen red, green and blue images simultaneously for a smooth, seamless picture. There are no "rainbowing" artifacts common with single-panel technologies.



DLP: A Single Chip Does All the Work

Because there is only one chip in a DLP projector, it must sequentially display red, green and blue images in rapid succession. This creates a strobing artifact known as the "rainbowing" effect. While most people are not affected by the strobing, it annoys some. The eyes and brain must work harder to form the full-color picture which may contribute to viewer fatigue.

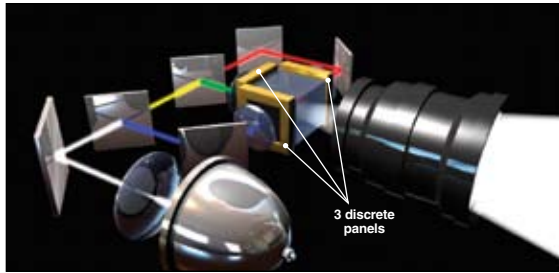
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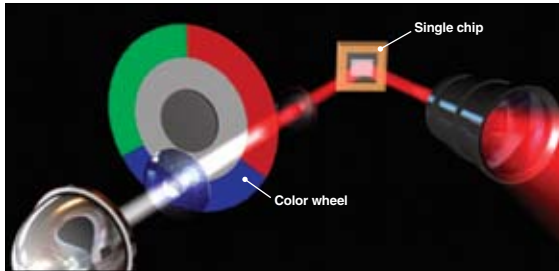
Fast Facts about
LCD Projectors





Liquid Crystal Display

When current is applied to an LCD panel, the liquid crystals change state—either blocking or allowing the polarized light to pass. Because it can variably change the amount of light, LCD is better able to produce a wider range of midtones. A special prism then blends the three monochromatic images into a single, full-color image that is sent to the projection lens.



Digital Light Processing®

For most consumer-level products, DLP® is a single-chip reflective technology. The chip is comprised of thousands of tiny mirrors actuated by the signal to either reflect light back for brightness, or deflect it for darker parts of the picture. White light is directed through a spinning color wheel to create rapid, sequential monochromatic images of red, green and blue. Our brain blends them into a single, full-color picture.

Sharpness

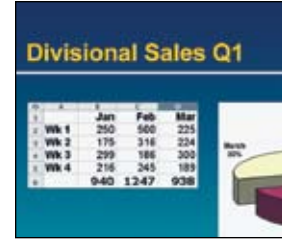
By definition, fixed-pixel display technologies such as LCD and DLP have a rigidly defined pixel structure. This can be observed as a subtle grid pattern throughout the picture.

DLP: The space between the tiny mirrors of a DLP chip can be minimized to reduce the grid pattern. It may also create a slightly smoother picture, which is good for viewing video sources. This can, however, be perceived as a softer image.

LCD: The boundary around each pixel cell of an LCD panel makes the pixel structure much more defined, and may tend to emphasize the grid pattern. It results in a sharper picture that is ideal for viewing fine text, spreadsheets and business graphics.



DLP typically produces a softer image that's good for video.



LCD produces a sharper image that's ideal for text & graphics.

Brightness and Color

DLP: Because the single chip can only display one color at a time, a DLP projector only shows one-third of its effective output at any given moment, resulting in lower overall brightness. Some DLP projectors add a white (clear) segment to the color wheel. It may increase overall brightness, but can decrease color accuracy and saturation.

LCD: The three panels of an LCD projector displays each of the primary video colors simultaneously at full intensity and purity. This results in rich, accurate color performance. The additive nature of combining all three colors at once optimizes brightness and efficiency.



DLP may exhibit reduced contrast and color saturation.



LCD produces natural rich colors.

Contrast

Contrast is the ratio of black level to overall brightness, and the range of grays in between.

DLP: Each tiny mirror of a DLP chip either totally reflects or deflects the light. That means there is light or no light any given instant. It creates the illusion of gray by rapidly flipping back and forth. While DLP is able to create deep blacks, it isn't as adept at defining subtle differences in midtones.

LCD: When electricity is applied to an LCD panel, the crystals change state—either blocking or allowing the polarized light to pass. Because the transition is variable, LCD is much better able to produce a smoother range of midtones. The result is natural, accurate color with more detail in highlights and shadows.



The limited grayscale of DLP can affect midtones and color accuracy.



The wider grayscale of LCD produces smooth, accurate color.